

Claims

1. A winding carrying part which produces a rotary field (field part) of an electronically switched two-phase reluctance machine, consisting of individual wound U-shaped yokes, characterized in that it consists of an assembly of several winding carrying U-shaped magnets (10) which are fixed on a nonmagnetic carrier frame (5), their winding connections (112B-113B) being connected by means of a fixed, form defined, axially mountable electric conductor compound (6) with each other and with further power conducting electric components (+, -).
2. A field part of a reluctance machine according to claim 1, characterized in that it has winding carriers (116) with shoulders (116') which serve to drive the beginnings of the winding bands (112A, 113A) at the beginning of the winding process and to insulate these beginnings (112, 113) from each other, eventually together with insulating foils (115), these winding bands (112A, 113A, 115) having openings (117) for the fixation on the winding carrier (116), the winding carrier having lateral shoulders (116'') as required which retain the ends of the bands (112B, 113B).
3. A field part of a reluctance machine according to claim 1, characterized in that the ends of the winding bands (112-113) show plug lugs (112B, 113B) which develop because of the adaptation, particularly because of the folding of the ends of the winding bands (112, 113), or because of the fitting of appropriate parts (112A', 113A').
4. A field part of a reluctance machine according to the preceding claims, characterized in that the U-shaped yokes (11) with the mounted windings (112-113) are extrusion coated with an insulating mass and are sealed and held together in this way and form a so-called U-shaped magnet (10), form defined and easy to handle and that, due to the extrusion coating in a matrix with an insulating plastic mass, the plug lugs (112B-113B) of the windings (112-113) are consolidated and shaped.
5. A field part of a reluctance machine according to the preceding claims, characterized in that it has a nonmagnetic frame (5) as a carrier which is made of a bearing carrying plate with columns 53 which run from the front to the rear end shield, the columns (53) being provided with an axial profile (52) for the

form-fit fixing of the U-shaped magnets (10), whereby the columns (53) can be spread out in the elastic area to simplify the assembly.

6. A field part of a reluctance machine according to the preceding claims, characterized in that the frame (5) consists of two preferably identical "half frames" (5, 5') which have a certain number of columns (53) which is the same or the half of the number of the U-shaped magnets (10) which can be axially mounted on both sides of the latter (10).
7. A field part of a reluctance machine according to the preceding claims, characterized in that it is carried by a frame (5) which has openings (51) for the fixing of the U-shaped magnets (10), the openings (51) being formed in the front by an end shield, laterally by two columns (53) and at the rear by a ring (flange) (5").
8. A field part of a reluctance machine according to the preceding claims, characterized in that the magnets (10) are fixed in the frame (5) by means of a tolerance compensating method in such a way that the pole faces (111) of the U-shaped magnets (10) are brought to stop against a calibrating roll (24) which has the diameter of the rotor space (20) which is centered in the bearings (25) and that the U-shaped magnets (10) are fixed in this position.
9. A field part of a reluctance machine according to claim 8, characterized in that the U-shaped magnets (10) are pressed on the calibrating roll (24) by an electromagnetic force.
10. A field part of a reluctance machine according to the preceding claims, characterized in that the form-fit fixing of the U-shaped magnets is carried out by means of a hardenable material which is brought-in in liquid or still plastic state in interconnected partial spaces between the U-shaped magnets (10) which are to be fixed mutually and the frame (5) in such a way that it fills the interconnected spaces (15, 52) between the U-shaped magnets (10) and the columns (53) of the frame (5).
11. A field part of a reluctance machine according to the preceding claims, characterized in that the fixing of the U-shaped magnets is carried out by means of prefabricated parts inserted into the interconnected spaces (15, 52) between

the U-shaped magnets (10) and the columns (53) of the frame (5) which are deformed with an appropriate method in order to interlock these parts.

12. A field part of a reluctance machine according to the preceding claims, characterized in that the electric connection of the winding connections (112B-113B) and of further high voltage conducting parts (+, -) is carried out by a conductor compound (6) which consists of metallic conductor paths (61) and of an insulating carrier (62).
13. A field part according to the preceding claims, characterized in that the conductor compound (6) consists of punched conductor paths (61) which are fixed on a plastic body (62) by sticking, clipping, ultrasonic riveting or extrusion coating.
14. A field part of a reluctance machine according to the preceding claims, characterized in that the punching of the conductor paths (61) takes place in two phases in such a way that, prior to the final punching out, the conductor paths can be handled in all, together with the residual half-product (64, 65) out of which they have been cut, for an easier fixing on the carrier (62), before the final punching out of the conductor paths (61) takes place by separating the edges (64, 65).
15. A field part of a reluctance machine according to the preceding claims, characterized in that the extremities (61B) of the conductor paths (6) have an electric contact with the ends of the windings (112B-113B) in the manner of plug-in connections.
16. A field part of a reluctance machine according to the preceding claims, characterized in that there are loops of current (61b) outside the plane of the conductor compound (6).
17. A field part of a reluctance machine according to the preceding claims, characterized in that the conductor compound (6) shows on one side a printed card (66) for weak current.
18. A field part of a reluctance machine according to the preceding claims, characterized in that it is designed as a rotor of a machine with two independent rotors, the frame (5) being mounted for this on a hollow shaft, the U-shaped

magnets (10) being mounted without balance error and protected against the destruction by centrifugal forces.

19. A field part of a reluctance machine according to the preceding claims, characterized in that it is entirely or partially protected by a housing fixed on the frame (5) which fixes or protects the motor parts.
20. A field part according to claim 19, especially for turbo-machines, characterized in that it is placed in a motor casing (9, 5") which has a thermal contact with head loaded motor parts (11, 21).
21. A field part according to claim 20, characterized in that the motor housing (9, 5") is situated inside a housing-type section (93) of the suction pipe and that air which protects the motor against dirt accumulation and eventually additionally cools, can flow inside the motor housing (9, 5") over a pipe (92) under the suction effect of the blower (94).
22. A field part of a reluctance machine according to the preceding claims, characterized in that it is constructed with wound conductors (112; 113) which have variable cross sections along a winding (A, B, C, D) so that each winding is thinner between the limbs (B) of the U-shaped yokes (11) than on its sides (A, C, D).